Section 1-3: Function Notations

Warm-up:

1. If $y = 3x - 2$, find y when $x = 0$.

2. If $y = 4x + \frac{x^2}{16}$, find y when $x = 3$.

3. If $y = \dfrac{4 - x}{x^2}$, find y when $x = 5$.

4. If $y = 3^{x-1}$, find y when $x = 6$.

Euler Notation:

Argument:

Value:

Example 1: $P(x) = x^3, Q(x) = 3x + 3, R(x) = \dfrac{x}{2x - 4}$. Evaluate the following:

a. $P(4)$ b. $Q(-3)$ c. $R(2)$

d. $P(-2)$ e. $Q(\frac{1}{3})$ f. $R(5)$

Mapping Notation:

Example 2: Evaluate using the functions in Example 1.

a. $P : 1 \rightarrow$ b. $Q : 2 \rightarrow$ c. $R : 3 \rightarrow$

Example 3: The area of a circle is a function of its radius. Rewrite the formula $A = \pi r^2$ using:

a. Euler's Notation

b. Mapping Notation

Example 4: If $a : x \to 2x + 7$, then $a : 14 \to ?$

Example 5: Suppose $f(x) = 4x^2 - 2x + 9$. Find $f(-3)$.

Homework:

"We can't solve problems by using the same kind of thinking we used when we created them." – Albert Einstein